

CLAIMS:

1. A metal halide lamp comprising a substantially cylindrical discharge vessel (3) having an internal diameter $D_i < 2.0$ mm and filled with an ionizable filling, wherein two electrodes are present at a mutual distance EA for maintaining a discharge in the discharge vessel, wherein the filling comprises an inert gas such as Xe having a pressure at room temperature between 5 and 25 bar, and an ionizable salt, characterized in that said ionizable salt is selected from the group comprising PrI_3 , NdI_3 and LuI_3 .
2. A lamp according to claim 1, wherein said ionizable salt further comprises NaI, and wherein the molar ratio $\text{NaI}/(\text{PrI}_3 + \text{NdI}_3 + \text{LuI}_3)$ lies between 1.0 and 10.3.
3. A lamp according to claim 2, wherein the molar ratio NaI/PrI_3 lies between 2.3 and 10.3, preferably between 3.0 and 5.7, and more preferably is approximately 3.5.
4. A lamp according to any of the preceding claims 1 - 3, wherein the amount of PrI_3 in the discharge vessel is between 10 and $335 \mu\text{mol}/\text{cm}^3$, preferably between 25 and $160 \mu\text{mol}/\text{cm}^3$, more preferably approximately $50 \mu\text{mol}/\text{cm}^3$.
5. A lamp according to claim 2, wherein the molar ratio NaI/NdI_3 lies between 3.0 and 6.7, preferably between 3.6 and 4.8, and more preferably is approximately 4.2.
6. A lamp according to any of the preceding claims 1 - 5, wherein the amount of NdI_3 in the discharge vessel is between 8 and $301 \mu\text{mol}/\text{cm}^3$, preferably between 30 and $167 \mu\text{mol}/\text{cm}^3$, more preferably approximately $45 \mu\text{mol}/\text{cm}^3$.
7. A lamp according to claim 2, wherein the molar ratio NaI/LuI_3 lies between 1.0 and 3.2, preferably between 1.2 and 1.8, and more preferably is approximately 1.4.

8. A lamp according to any of the preceding claims 1 - 7, wherein the amount of LuI_3 in the discharge vessel is between 15 and $414 \mu\text{mol}/\text{cm}^3$, preferably between 27 and $230 \mu\text{mol}/\text{cm}^3$, more preferably approximately $69 \mu\text{mol}/\text{cm}^3$.

5 9. A lamp according to any of the preceding claims 1 - 9, wherein $D_i < 1.5 \text{ mm}$.

10. A lamp according to any of the preceding claims 1 - 10, wherein EA lies between 3 mm and 7 mm.

10 11. A lamp according to any of the preceding claims 1 - 11, wherein the discharge vessel has a ceramic wall.

12. A lamp according to any of the preceding claims 1 - 12, wherein the discharge vessel is surrounded by a gas-filled outer bulb.

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13. A lamp according to any of the preceding claims 1 - 13, wherein the lamp power lies between 20 W and 40 W.